

ABSTRACT

A steel bar for a steering rack that contains 0.50 to 0.60% by mass of C, 0.05 to 0.5% by mass of Si, 0.2 to 1.5% by mass of Mn, 0.0005 to 0.003% by mass of B, 0.005 to 0.05% by mass of Ti, 0.0005 to 0.1% by mass of Al, and 0.002 to 0.02% by mass of N is provided. Given D as a diameter of the steel bar, then the steel bar is adjusted in such a manner that quenched and tempered structures in a portion of the steel bar at a depth of $D/4$ from a surface satisfy conditions I), II), and III) as follows: I) a sum of a tempered bainitic structure and a tempered martensitic structure accounts for 30 to 100% in area percentage; II) a regenerated perlite structure accounts for 0 to 50% in area percentage; and III) a sum of the tempered bainitic structure, the tempered martensitic structure, and the regenerated perlite structure accounts for 50 to 100% in area percentage.